Joint Cruise Missile Defense Joint Test and Evaluation

JCMD JT&E

LTC(P) Paul McGuire
Deputy Director

Background

Former PACAF/CC Concerns

"... each service has been exploring independent CMD initiatives in response to the growing Land Attack and Anti-ship Cruise Missile threat. A JT&E could serve not only to unite the services in developing a Joint approach to the CMD mission, but also provide tremendous insight on how our Combat Air Forces should organize, train, and equip for this near future core mission area. Our ultimate goal with this proposal is to identify the resources and training our forces require to perform the CMD

General Richard Myers
Former Commander PACAF

JCMD Charter

- **Air Force proposed Joint Cruise Missile Defense JT&E in**
  - Generated in response to concerns about emerging CM threat
  - PACAF nomination – PACOM combatant command sponsor
  - Endorsed by USCINCPAC, SACEUR, CENTCOM, JTAMDO, NORAD
  - JFS conducted by 53WG, Air Warfare Center, Eglin AFB FL
- **OSD/DTSE&E Charter JCMD, July 1999**
  - OSD Funding - $17.4M
  - Designated USAF as lead service
  - Investigate, evaluate, improve the operational effectiveness of jc defense against cruise missiles

JCMD Mission

- **Purpose:**

  – Characterize the current (02) and near-term (04) effectiveness
  of a typical JIADS in countering the land attack cruise missile
  threat

- **Objectives:**

  – Provide a timely definitive assessment of CMD capability
    - **Assess current and evolving TTP and CONOPS**
    - **Provide recommendations for improvements**

  – Develop a Joint test methodology for cruise missile

GOSC Principals

Looking to expand GOSC to include: SIAP & JFCOM Representative

- Major General Emerson Gardner
  Director for Operations
  U.S. Pacific Command
- SES-3 Michael Crisp
  Office of the Secretary of Defense
  Principal Advisor
- Rear Admiral Michael Mathis
  Director, Joint Theater Air and Missile Defense Organization
  (JTAMDO)
- Major General Daniel Leaf
  Director of Operational Requirements
  Deputy Chief of Staff for Air and Space Operations, HQ USAF
- Major General John Urias
  SMDC DCG and PEO AMD
- Rear Admiral Christopher Moe
  Assistant Chief of Naval Operations
  Missile Defense

Role of the GOSC

- **Senior Advisors to JCMD**
- **Provide guidance within charter & budget**
  - Operational focus
  - Test concepts, plans, participants, venues
- **Provide assistance**
  - Test assets
  - Test team manning
  - Legacy owners, agreements
  - Venue partnerships, agreements
  - Implementation of legacy products
  - Participation in planning and support of test events
- **Feedback of results**

Evaluation Process

JCMD Focus

E3 AWACS

E-2 HAWKEY

F-14

F-18

F-16

F-15

CRC/TPS-75

JIADS

TAOC/TPS-59

Land Attack Cruise Missile

THREAT

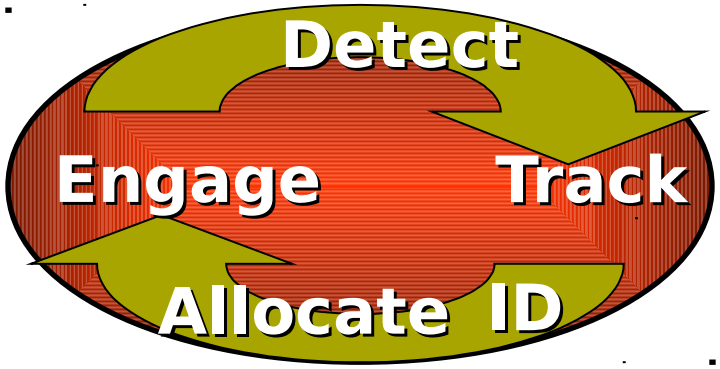
SENTINEL

AEGIS

AVENGER

PATRIOT

LINEBACKER



Comprehensive Strategy for a Composite Threat

Theater Air And Missile Defense

- Passive Defense
- Active Defense
- Attack Ops/ CCF

C4I

Manned Aircraft

Cruise Missile

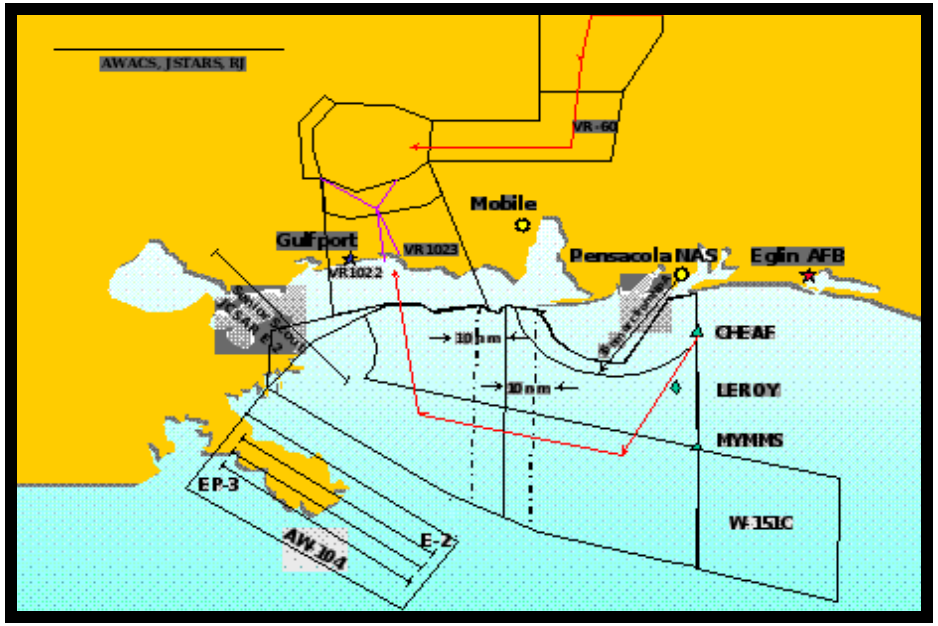
Surface-to-Surface

Evaluation Approach

Integrates Field and Simulation Testing

Field Test (FT)

Mini Test (ASCIET) – Mar 00*
Joint Combat Identification Evaluation Team (JCIET) – Apr 02*
& CJTFEX 04-2 – Jun 04

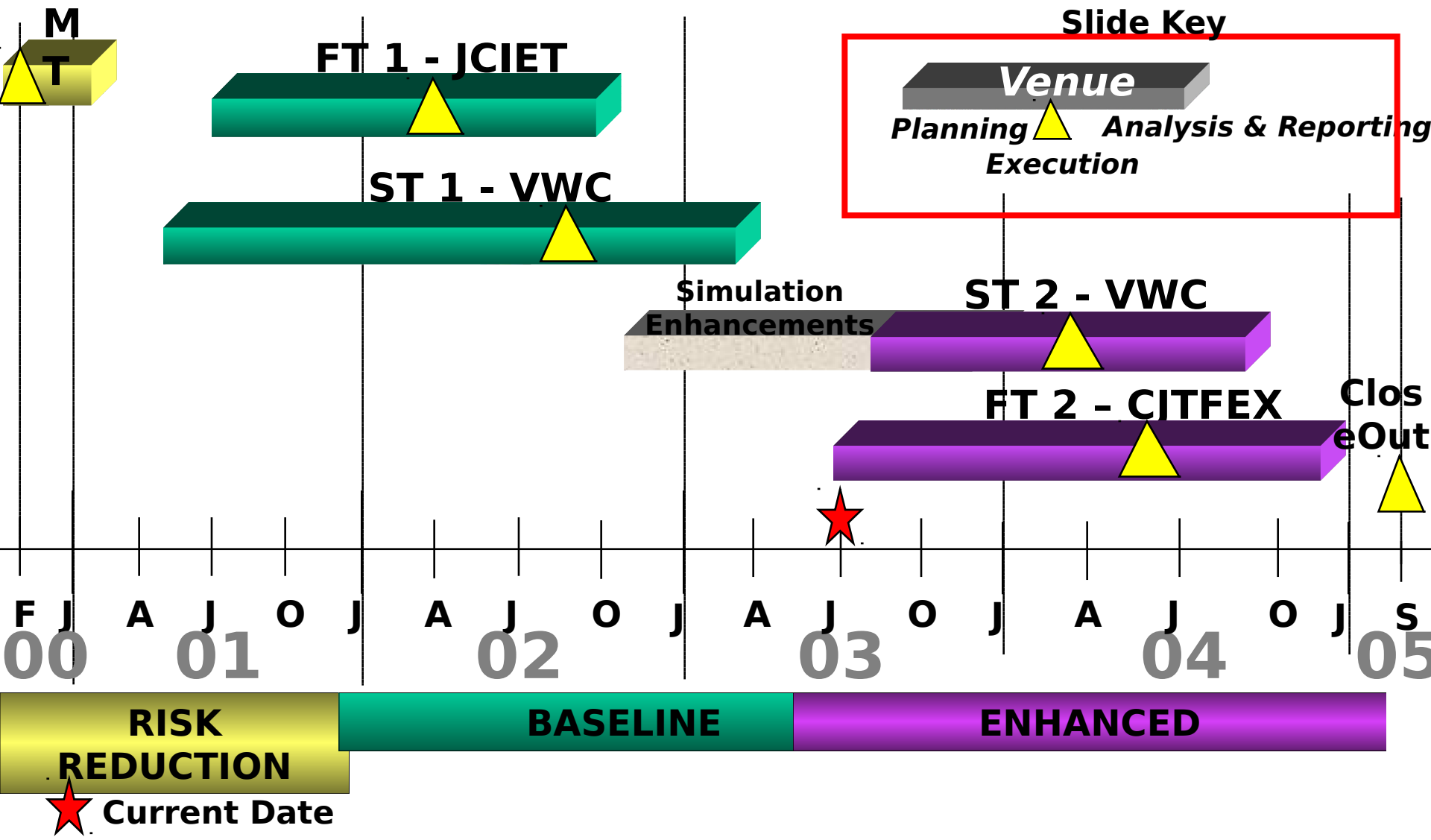


Simulation Test (ST)

Virtual Warfare Center (VWC) – Sep 02* and Mar 04
Boeing Facility St. Louis, MO and other distributed sites

*Completed Test Event

Test Schedule

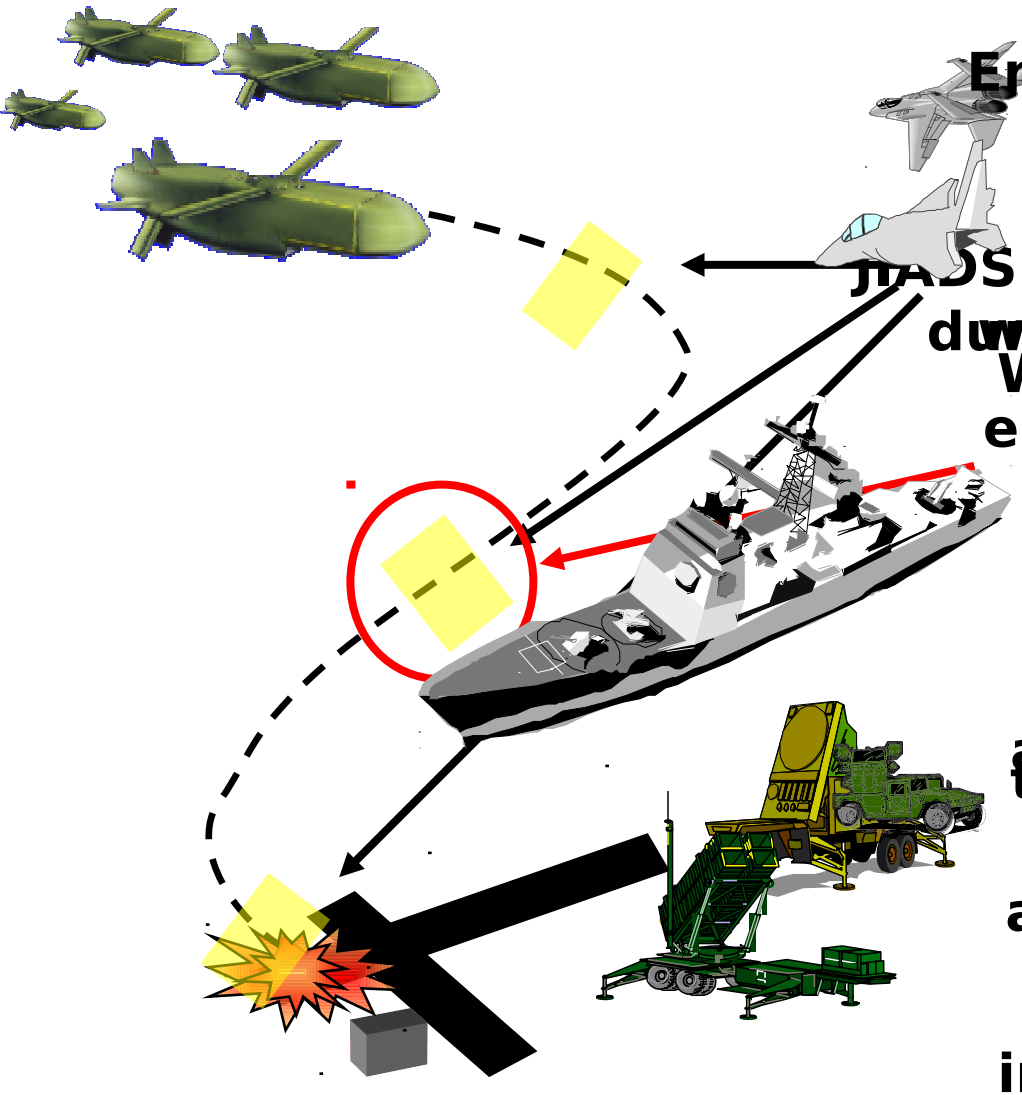


JIADS Baseline Assessment

CMD Issues

While current Service AD systems possess CMD capability, there are TTP/CONOPS, Technological, and Training issues that affect JIADS effectiveness and efficiency.

“Kill Chain” Assessment



Engagements are limited due to

line-of-sight, smaller

JIADS able to detect majority of CM

during system engagement

Within limited amount

envelopes, and other earlier

flight line noted smaller

detection, tracking,

Battle Damage Assessment have

limited

and allocation issues. The

time to allocate assets to

engage LACMs

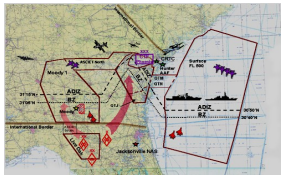
are engagements normally made

in self-defense and without multiple

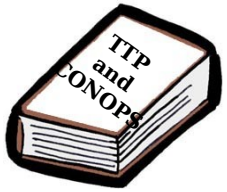
JCMD Support for the Warfighter

Products Available to the Warfighter

JCMD capabilities assessment baseline and enhancements Database/Reports



JCMD field test methodology



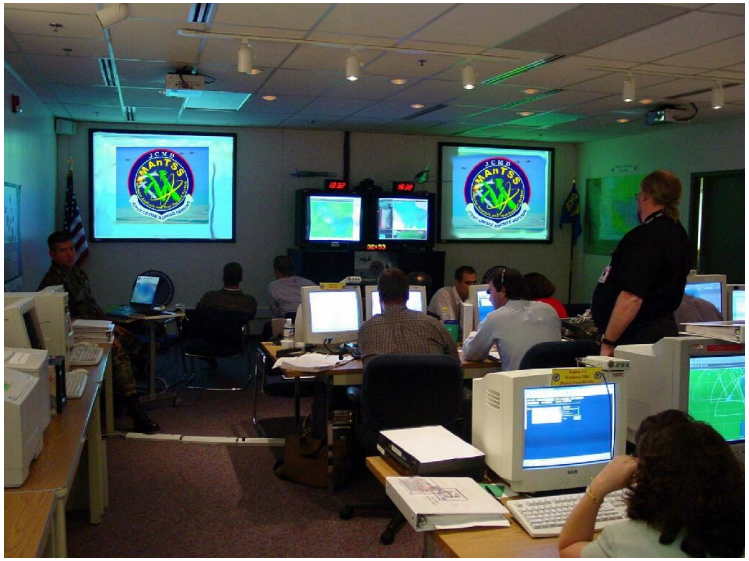
Changes/updates to Joint and Service TTP and CONOPS

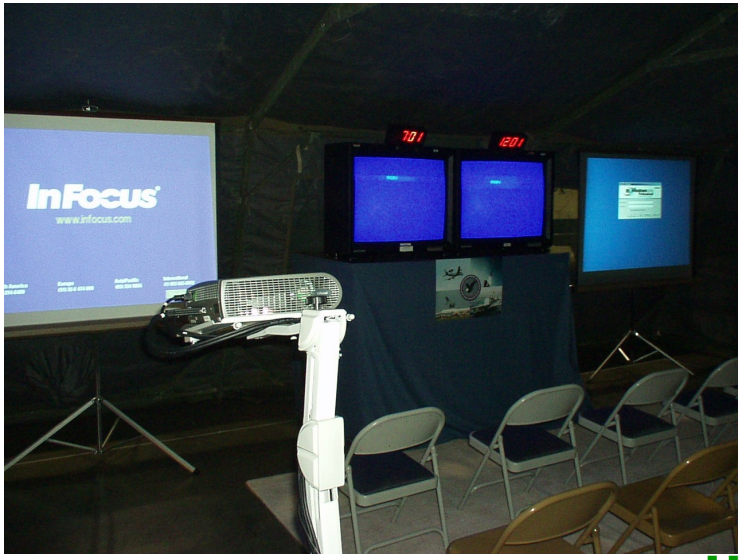
CMD surrogate operations

OITL simulation architecture, process, and methodology

Remote Operations Center tools

Remote Operations Center (ROC)





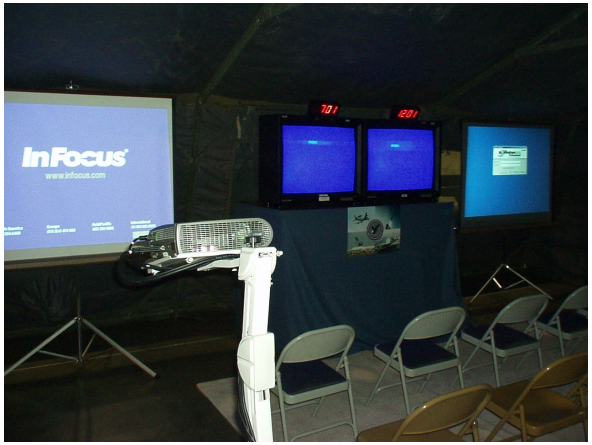
Remote Operations Center (ROC)

- Deployable
- Air & Missile Defense data planning, collection, viewing, and analysis tools
- Real-time mission monitoring
- AAR center
- Surrogate operational control

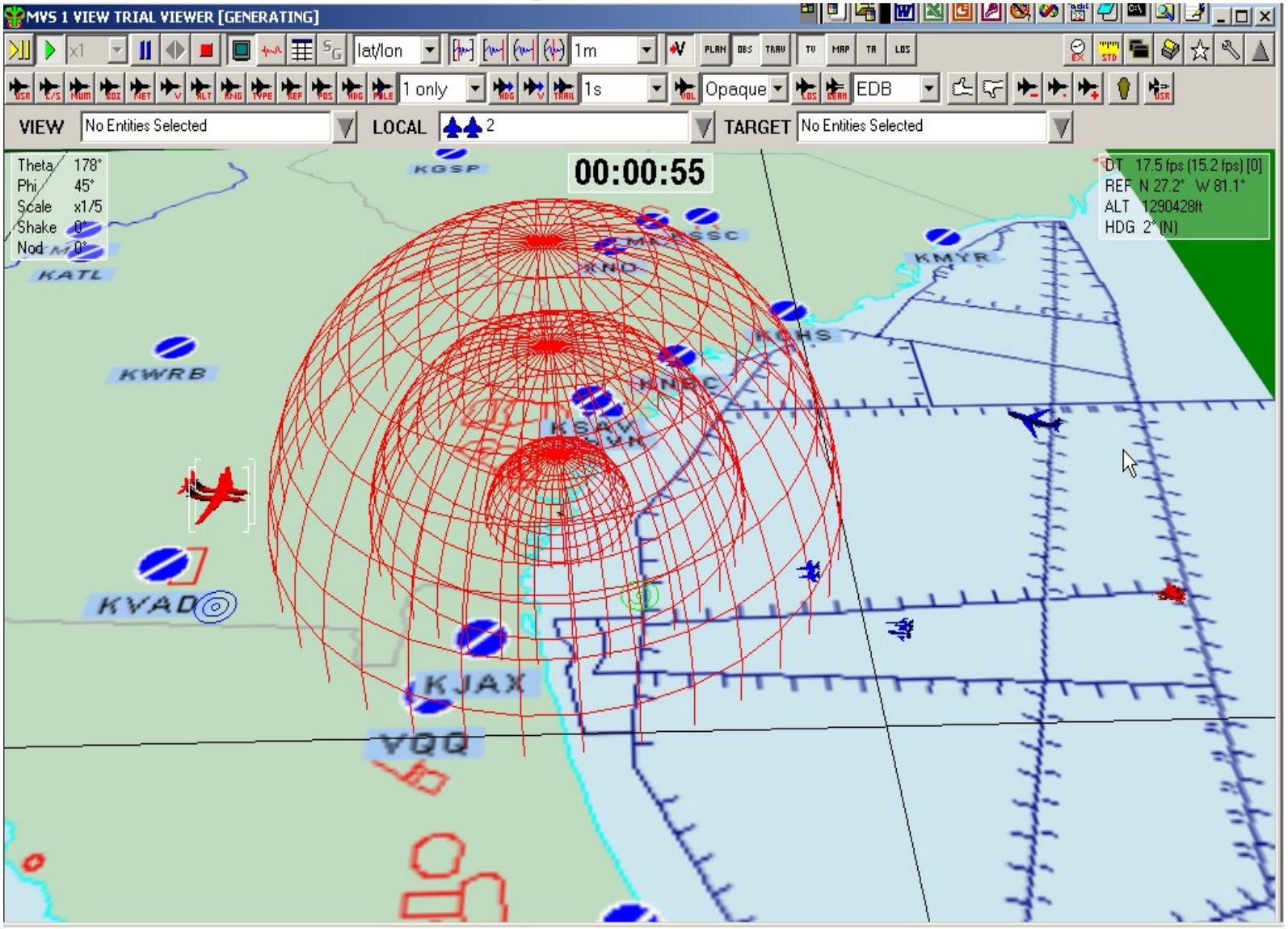
ROC Hardware and Software Tools

Use of tools to support:

1. Pre-event planning and prediction
2. Mission viewing and data collection
3. Mission AAR Support
4. Surrogate operations
5. Post mission analysis
6. Report development



Modular Analysis Test Support System (MAnTSS)



Surrogate Operations

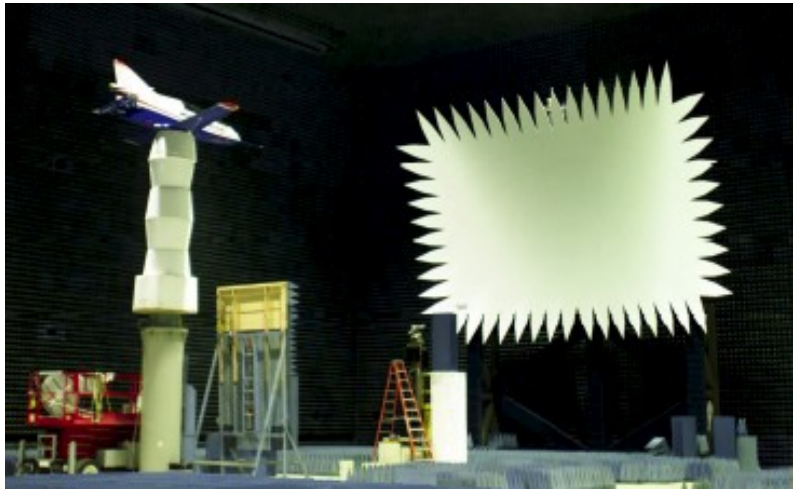
Cruise Missile Surrogate (SMART-1)
Small Manned Aerial Radar Target – Model

- **Smallest manned jet**
- **Low RCS**
- **Low altitude**
- **Limited night operations**
- **Fully instrumented (live and post missio**
- **2 VHF dual radios**
- **Sophisticated flight following system**
- **Backup aircraft ready to support ops**

SMART-1

(Small, Manned, Aerial Radar Target, Model 1)

The SMART-1 has one of the lowest boresight RCS (Radar Cross Section) of any manned target vehicle. Its small size, dependability, flexibility and economy make it a natural threat representative and supportable system



New SMART-1 Upgrades

New Flight Systems Sierra EFIS (Electronic Flight Information Systems) along with dual VHF transceivers, cockpit and panel lighting, navigation and strobe lights suitable for night/ and light WX operations

New aircraft capabilities also include airframe and engine performance upgrades to allow enhanced flight performance

SMART-1 Instrumentation Equipment

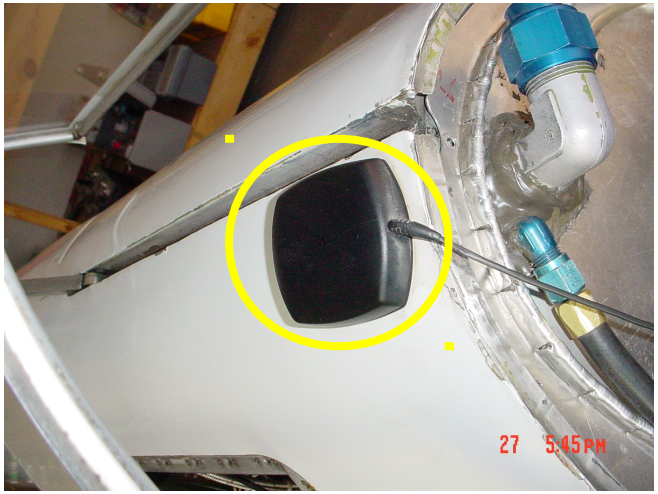
UHF Radio

Data Logger

GPS Device

UHF Radio Blade

Radio and Data Logger Installed



GPS Exterior Antenna

JCMD Instrumentation & Data Collection Plan

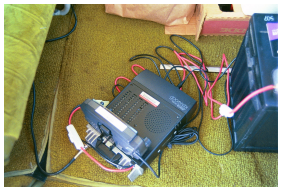
UHF ASCII Encoded Between 406-420 MHz

NP-3 Relay Aircraft with relay package

UHF ASCII Encoded Between 406-420 MHz

SMART-1 with Radio Navigational Instrumentation Package (RNIP)

Ground Station Antenna



On-board GPS recording to supplement live feed data

JCMD Remote Operations Center

Radio receiver

MAnTSS Modular Analysis Test Support System

Live Mission Recording

DIS Entity State PDU's

CATNIP Computer Aided Translation Navigational Instrumentation Package

MAnTSS Modular Analysis Test Support System

Live Mission Review & Quick-turn Analysis

Surrogate Ops and Briefing Systems

OUTPUTS

Field - Surrogate Operations

Surrogate systems used to support testing, training, and exercise

Worked! Operating profiles, instrumentation, data collection & analysis, FAA, & Safety

Multiple types of surrogates acquired and used in field exercise to replicate a LACM threat

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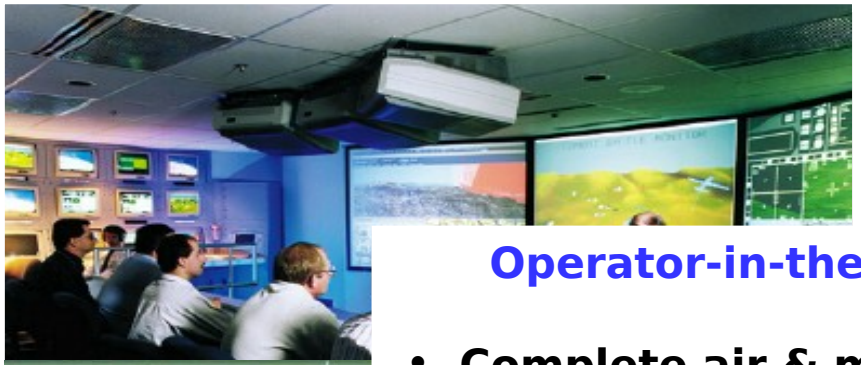
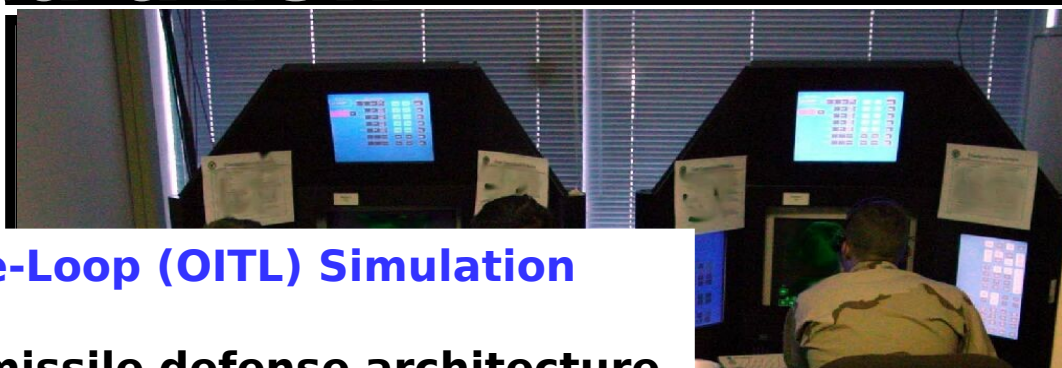
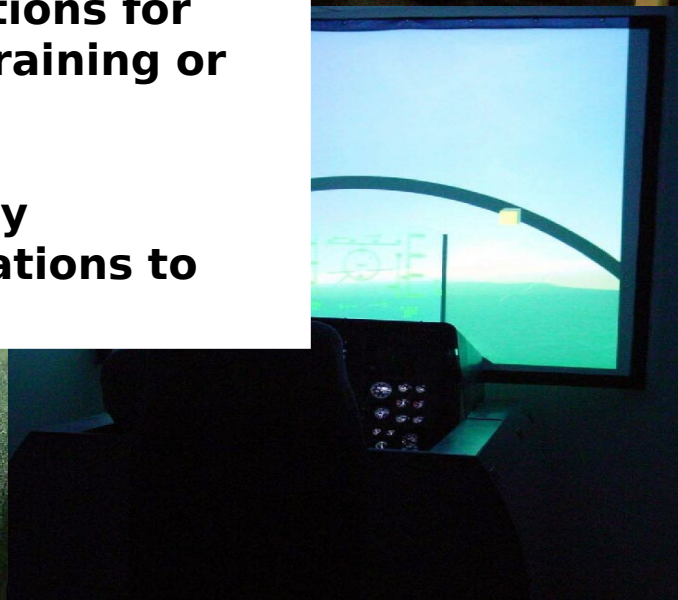
Operator-in-the-Loop (OITL) Simulation







Operator-in-the-Loop (OITL) Simulation

- Complete air & missile defense architecture (includes sensors, shooters, and command/control)
- Distributed network of systems
- Utilizes JDEP in place capabilities
- Provides scenario and operations for complete air & missile defense training or exercise event
- 300 plus bodies
- AAR and VTC capability
- Event at user designated locations to facilitate usage

JCMD JIADS ST-2 Simulation

Patriot Information Coordination Center

PAC-3*

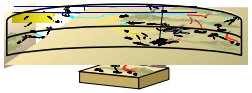
Patriot Fire Units

JLENS*

ABMOC/ SENTINEL/ SHORAD

ENHANCED* SENTINEL (ETRAC)

Tactical Air Operations Center

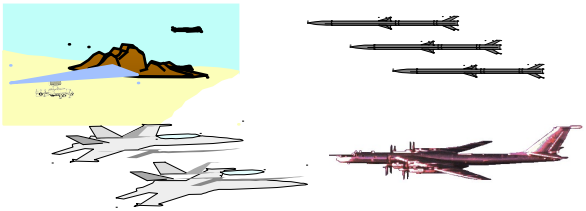


CLAWS*

* Enhancements

Terrain
Threat Forc
Data Collection

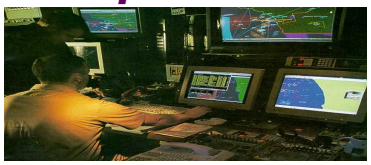
Environment Generator



Virtual Warfare Center War Room

Link-16 Simulation

Joint Air Operations



Aegis Combat Information Center

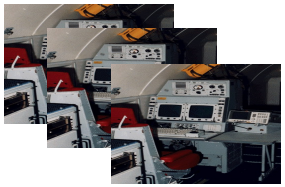
CEC*

E-2C

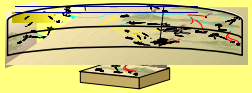
F/A-18C/D

F-15C

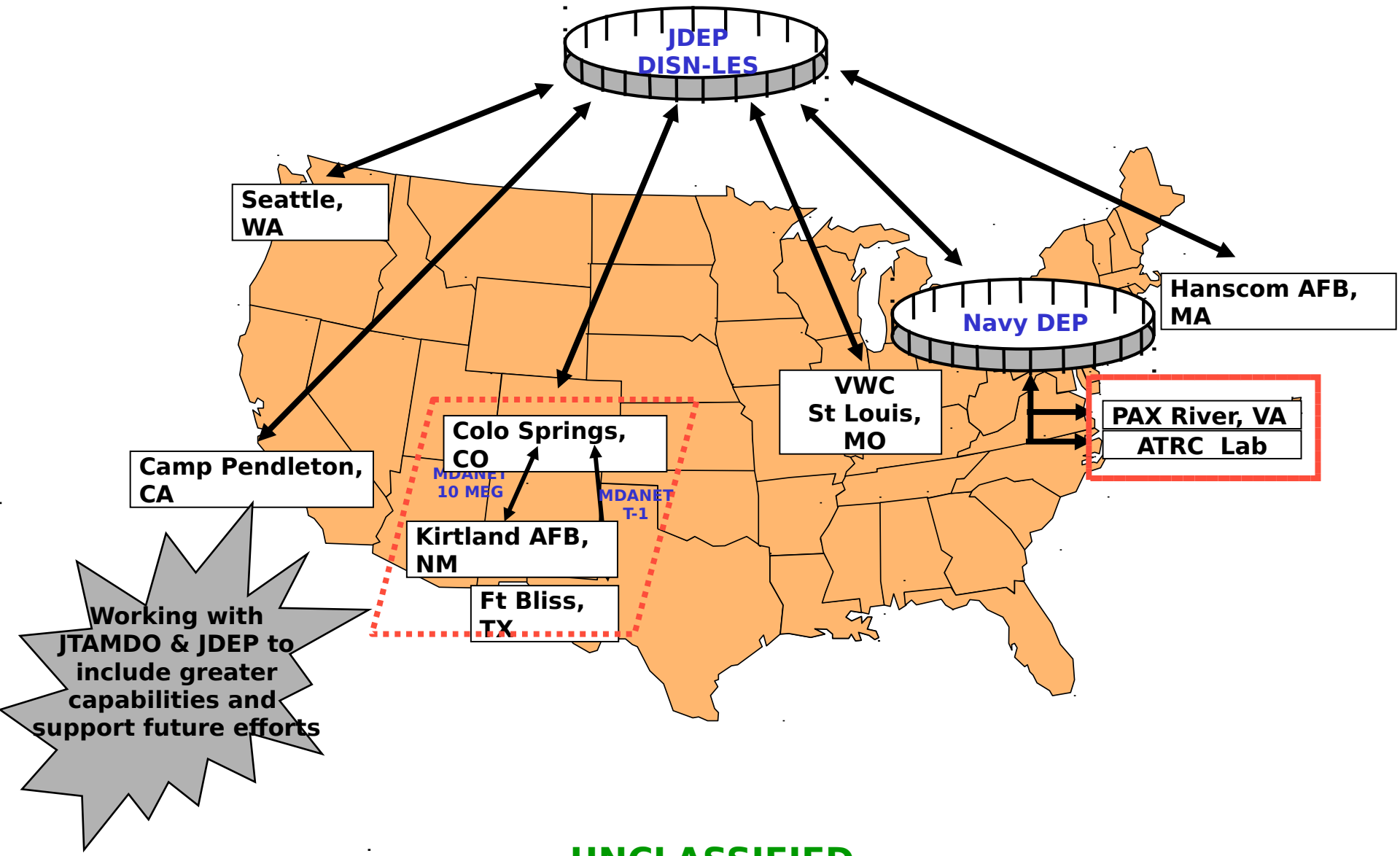
E-3C



CRC



ST-2 Distributed Architecture



JCMD Conference & Exhibition

WHAT: First Annual Worldwide Cruise Missile Defense Conference and Exhibi

WHEN: November 17-20, 2003

WHERE: Hilton Sandestin Beach Resort, Destin, Florida

CONFERENCE THEME: "Cruise Missile Defense Now and in the Future"

SPONSORED BY: OSD-Joint Cruise Missile Defense, Joint Test & Evaluation

EVENTS: Includes 3 day conference with Keynote speaker, Exhibit Space (over 8762 sq. ft.), Golf Tournament, and Social

RSVP: www.jte.osd.mil/jcmd/Conference.htm or contact Lt Col Christine Mar
At (850)882-4661, ext. 132,DSN 872 or christine.markwardt@eglin.af.mil

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WASHINGTON, 18 Aug 2002 — Defense Secretary Donald H. Rumsfeld has sent the White House a classified memo warning of the spread of cruise missiles among hostile nations and urging an intensified government-wide effort to defend against them.

This timely warning is evidenced by the cruise missiles employed against Coalition forces during Operation Iraqi Freedom; one of these hit a coastal shopping mall in Kuwait City.

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For More Information
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